



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2000-0296

January 18, 2001

Mr. Lawrence C. Evans
Portland District, Corps of Engineers
P.O. Box 2946
Portland, Oregon 97208-2946

Re: Section 7 Formal Consultation and Essential Fish Habitat Consultation, McMinnville Water & Light—McGuire Dam, Yamhill County, Oregon (Corps No. 1997-01567)

Dear Mr. Evans:

Enclosed is the National Marine Fisheries Service's (NMFS) biological opinion (Opinion) for the proposed issuance of a Clean Water Act section 404 permit (Corps No. 97-1567) authorizing McMinnville Water & Light to conduct work in waters of the U.S. in connection with the proposed expansion of McGuire Reservoir. McGuire Reservoir and Dam are located roughly 14 miles northwest of the City of McMinnville in Yamhill County, Oregon. The U.S. Army Corps of Engineers requested informal consultation for the subject action. NMFS does not concur that the proposed action will result in discountable and insignificant effects. Therefore, the enclosed document represents formal consultation pursuant to section 7(a)(2) of the Endangered Species Act (ESA).

This Opinion considers the potential effects of the proposed action on Oregon Coast coho salmon (*Oncorhynchus kisutch*), which occur in the proposed project area. Oregon Coast coho salmon were listed as threatened under the ESA on August 10, 1998 (63 FR 24998), critical habitat was designated on February 16, 2000 (65 FR 7764) and protective regulations were issued on July 10, 2000 (65 FR 42423). NMFS concludes that the proposed action is not likely to jeopardize the subject species, or destroy or adversely modify designated critical habitat. Included in the enclosed Opinion is an incidental take statement with terms and conditions to minimize the take of the subject species. This Opinion also serves as consultation on Essential Fish Habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and its implementing regulations (50 CFR Part 600).

Questions regarding this letter should be directed to Scott Carlon of my staff in the Oregon State Branch Office at 503.231.2379.

Sincerely,

Michael R. Carlon

Donna Darrin
Acting Regional Administrator

cc: Tom Melville - DEQ



Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

McMinnville Water & Light—McGuire Dam
(Corps Permit ID No. 1997-01567)

Agency: U.S. Army Corps of Engineers, Portland District

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: January 18, 2001

Refer to: OSB2000-0296

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1. BACKGROUND

McMinnville Water & Light (applicant) has applied for a permit with the U.S. Army Corps of Engineers, Portland District (Corps), to expand McGuire Reservoir by raising the elevation of McGuire Dam. The purpose of the expansion is to meet projected near-term municipal water needs to the year 2020 for the City of McMinnville. McGuire Reservoir and Dam are located in Yamhill County approximately 14 miles northwest of the City of McMinnville, near the crest of the coast range. McGuire Reservoir essentially constitutes the headwaters of the Nestucca River, which flows west to the Pacific Ocean.

Fish passage was not included in the original construction (1969) of McGuire Dam. Oregon state law requires that fish passage be provided at any dam or artificial obstruction across any body of water in which game fish exist (Oregon Revised Statutes 498.351 and 509.605). Accordingly, the applicant undertook an analysis of fish passage alternatives in connection with the proposed action. This evaluation was coordinated with the National Marine Fisheries Service (NMFS), Oregon Department of Fish and Wildlife (ODFW), Corps, U.S. Fish and Wildlife Service, and the Bureau of Land Management. It was concluded that fish passage was not feasible for the following reasons: Extreme fluctuation in reservoir levels under normal operations, lack of stored water available for adequate passage flows, and limited habitat availability—just 1.3 miles of stream habitat will be available above the dam after the reservoir is raised. Therefore, pursuant to House Bill 2607, the applicant requested that the Oregon State Fish and Wildlife Commission waive fish passage and allow alternative mitigation.

The alternative mitigation proposed by the applicant was modification of a reach of the Nestucca River commonly referred to as the *chute*. The *chute* is located approximately 2.6 miles downstream of McGuire Dam, and is thought to be at least a partial barrier to anadromous fish and may be a complete barrier to Oregon Coast coho salmon. The proposed modifications are expected to provide better fish passage conditions for anadromous fish. Also proposed are habitat improvement measures in the Meadow Lake reach (just upstream of the *chute*) and a minimum instream summer flow. A waiver was granted and the alternative mitigation established in a March 19, 1999, Memorandum of Understanding (MOU) between the applicant and ODFW. NMFS agreed that the proposed mitigation was an adequate alternative to fish passage at the dam.

Oregon Coast (OC) coho salmon, listed as threatened under the Endangered Species Act (ESA) (August 10, 1998, 63 FR 42587), occur downstream of the proposed action area. In addition, critical habitat for this species was designated on February 16, 2000 (65 FR 7764) and protective regulations were issued on July 10, 2000 (65 FR 42423). The Corps is proposing to issue a permit under section 404 of the Clean Water Act, and has requested informal consultation pursuant to section 7 of the ESA. Along with the request for consultation, the Corps provided a December 1, 1999, biological assessment (BA) and February, 2000, draft environmental assessment (DEA).

Although much of the proposed work is expected to result in net benefits for OC coho salmon, NMFS does not concur that potential effects from construction activities are discountable and insignificant. Therefore, this document represents formal consultation and constitutes NMFS' biological opinion for the subject action. The objective of this biological opinion is to determine whether the proposed action is likely to jeopardize the continued existence of OC coho salmon or destroy or adversely modify

designated critical habitat for this species. This consultation is undertaken pursuant to section 7(a)(2) of the ESA and its implementing regulations, 50 CFR 402.

2. PROPOSED ACTION

The proposed action entails raising the existing 78-foot high McGuire Dam by 30 feet (from elevation 1,875 to 1,905) to increase storage capacity from approximately 3,760 acre-feet to 9,800 acre-feet. Proposed improvements associated with the subject action include a new spillway at the left abutment; strengthening the existing spillway pipe and converting it to a mid-level outlet and emergency drain; a new multi-level outlet and drain tower; lengthening and strengthening the existing outlet/drain pipe; and new diversion structures to regulate flow.

Approximately 16,000 cubic yards of earthfill core material will be placed directly above the existing core and extended vertically from the abutments. This material will be quarried from borrow sites along the northeast side of the reservoir, upstream of the existing dam. Another 6,000 cubic yards of filter material will be placed over the core and approximately 100,000 cubic yards of rock will be placed over the filter material. Rock will be quarried from a borrow site next to the left abutment of the dam. The rock quarry will be oriented to form a suitable inlet area for a new spillway. The dam's footprint will expand by 0.91 acre on the reservoir side and roughly 0.71 acre on the downstream side. Furthermore, a cofferdam will be constructed upstream of the existing structure and will consist of roughly 12,000 cubic yards of material. The cofferdam will allow continuous operation of the reservoir and allow for controlling storm runoff if necessary.

Construction staging (office trailers, equipment parking, material stockpiles, etc.) will occur adjacent to the dam. Fueling and fuel storage will be located away from water and drainage areas. Rock processing equipment and settling ponds will be located near the borrow sites.

Mitigation for fishery resources include summer flow releases to the upper Nestucca River, habitat improvements within the Meadow Lake reach, and improving fish passage at the *chute*. Modification of the *chute* will entail an analysis of stream morphologic, hydraulic, and hydrologic conditions. Work will primarily focus on two areas within the *chute* that contain near vertical drops of roughly 12-20 feet. While a final design has not been established, the MOU designates that the applicant coordinate design efforts with ODFW and NMFS. It is anticipated that the final design will incorporate a series of pools and relocation of existing fish passage obstructions. Streamflow will be diverted around the work sites.

It is anticipated that it will take two years to complete the proposed action. ODFW's preferred in-water work period for the upper Nestucca River is July 1 through September 15. Activities occurring on the downstream face of the existing dam, such as construction of the stilling basin, diversion boxes, and new spillway, will be accomplished during the in-water work period. In-water work at the *chute* and Meadow Lake reach will occur within the work window as well. Activities such as borrow operations and expansion of the toe of the dam would occur outside of the in-water work window.

3. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

Although there are currently limited data to assess population numbers or trends, NMFS believes that all coho salmon stocks comprising the OC coho salmon ESU are depressed relative to past abundance. The status and relevant biological information concerning OC coho salmon are well described in the proposed and final rules from the Federal Register (July 25, 1995, 60 FR 38011; and May 6, 1997, 62 FR 24588, respectively), Weitkamp *et al.* (1995), and Jacobs *et al.* (2000).

The OC coho salmon ESU, although not at immediate danger of extinction, may become endangered in the future if present trends continue (Weitkamp *et al.* 1995). Spawning escapements for this ESU may be at less than 5% of abundance from that in the early 1900s and recent production of coho salmon may be less than 10% of the historic production (Nickelson *et al.* 1992). Average recruits-per-spawner may also be declining. Long-term trends of total pre-harvest abundance and spawner escapement show significant declining trends over the last 49 years (1950-1999). The level of both spawner escapement and total pre-harvest abundance observed in 1997 and 1998 was the lowest on record for OC coho salmon (Jacobs *et al.* 2000).

Timing of adult coho salmon river entry is largely influenced by river flow. Coho salmon normally wait for freshets before entering rivers. In the Nestucca Basin, adults return between October and January with peak upstream migration usually occurring in the second half of October when the fall rains return. Spawning typically occurs between mid-November and mid-December with peak spawning between late November and early December. Juvenile coho salmon rear for one year in fresh water before migrating to the ocean. Juvenile OC coho salmon migrate out of the Nestucca Basin as smolts between March and June. Peak outmigration typically occurs in late April and early May (Weitkamp *et al.* 1995).

McGuire Dam, located at river mile 49, essentially makes up the headwaters of the Nestucca River. Approximately 2.6 miles downstream of the dam is a reach of the Nestucca River commonly referred to as the *chute*. Little information exists regarding the presence/absence of anadromous fish occurring above the *chute*. This reach is comprised of large boulders, bedrock outcrops, and large woody debris which form a series of rapids and cascades. The average gradient is approximately 8.4%. The *chute* is thought to be at least a partial barrier to anadromous fish. The BA states that juvenile coho were observed in Walker Creek, a tributary upstream of the *chute*, in 1971; and that these fish were likely flushed out of McGuire Reservoir which was stocked with coho salmon from 1971 through 1973. Fish surveys above the *chute* (Meadow Lake reach and Walker Creek) were conducted by the applicant in 1998. No anadromous fish were found. OC coho salmon do occur throughout the Nestucca Basin downstream of the *chute*.

Critical habitat for OC coho salmon includes Oregon coastal river basins (freshwater and estuarine areas) between Cape Blanco and the Columbia River. Freshwater critical habitat includes all waterways, substrates, and adjacent riparian areas—areas adjacent to a stream that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter—below longstanding, natural impassable barriers (i.e., natural waterfalls in existence for at least several hundred years) and several dams that block access to former coho salmon habitat.

During the OC coho salmon critical habitat rule making process in 1999, the applicant submitted to NMFS evidence suggesting that stream reaches above the *chute* should not be included in the final critical habitat designation. This argument was primarily based on the historical record dating back to about 1900, coho salmon jumping ability, and the height of falls within the *chute*. NMFS established the upper extent of the ESU boundary in the Nestucca Basin at McGuire Dam. NMFS did not delineate specific critical habitat boundaries¹ but stated that critical habitat did not extend above longstanding, naturally impassable barriers. A road is located immediately adjacent to the *chute*, restricting channel migration and forcing the water through a more narrow passage. This could maintain hydraulic conditions such that it prevents coho salmon from navigating the *chute*. Nevertheless, it is not known whether OC coho salmon occurred upstream of the *chute* before Euroamericans began settling in the area.

During this consultation, the applicant expressed concern that this biological opinion could potentially establish that areas upstream of the *chute* are in fact designated critical habitat if the opinion stated so. NMFS agrees that it is questionable whether OC coho salmon occurred historically in areas upstream of the *chute*. Even so, the point is moot. The purpose of this opinion is to analyze potential impacts that may occur from the proposed action. It does not affect any change in current rules. NMFS realizes that the final rule for critical habitat is vague as to where the upstream extent of the designation occurs (i.e., McGuire Dam or the *chute*). Nevertheless, the effects on habitat are the same whether it is on critical habitat upstream of the *chute* or downstream of this location. Furthermore, should OC coho salmon pass the *chute* after the proposed improvements are completed, ESA protections will follow where they occur.

4. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of (1) defining the biological requirements and current status of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NMFS finds that the action is likely to jeopardize the listed species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed

¹For explanation, please refer to the final rule (February 16, 2000, 65 FR 7764). This can be viewed at <http://www.nwr.noaa.gov/1salmon/salmesa/cohoorc.htm>.

species. NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. If NMFS concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent measures available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing of OC coho salmon under the existing environmental baseline.

4.1. Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list OC coho salmon for ESA protection and also considers new data available that is relevant to the determination (Weitkamp *et al.* 1995).

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, rearing, and migration. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

4.2. Environmental Baseline

The environmental baseline is an analysis of the effects of past and on-going human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed where actions described in this opinion lead to additional activities or affect ecological functions contributing to stream degradation. For this consultation, the action area includes the Nestucca River, including riparian areas, downstream to roughly river mile 46, or the downstream end of the *chute*.

The Nestucca River flows approximately 53 miles from its headwaters to Nestucca Bay. The upper portion of the river (headwaters to Powder Creek) is on Oregon Department of Environmental Quality's 303(d) list of water quality limited streams for habitat modification and sedimentation. About 85% of the

watershed is forested. Land ownership in the Nestucca Basin is mostly Federal with the U.S. Forest Service and Bureau of Land Management managing roughly 106,000 acres (about 65%). Industrial forest owners manage approximately 27,000 acres (17%) and the Oregon Department of Forestry manages about 9,000 acres (5%). The remaining 15% is in small private holdings, dairy farms, small wood lots, and residential or rural residential properties (USDA and USDI 1994a). The upper Nestucca River was designated as a Key Watershed under the Northwest Forest Plan (USDA and USDI 1994b) and as such is considered an important area for protection of fish stocks.

The bulk of production for the OC coho salmon ESU is skewed to its southern portion where the coastal lake systems (e.g. Tenmile, Tahkenitch, and Siltcoos Basins) and the Coos and Coquille Rivers are more productive (Jacobs *et al.* 2000 and Weitkamp *et al.* 1995). The proposed action area is located in the northern half of the ESU where production is more depressed and habitat is underseeded. In 1998, it was estimated that spawner abundance in the Nestucca River basin was at an all time low of just 169 fish; however, the preliminary spawner abundance estimate for 1999 increased to 2,109 fish.

5. ANALYSIS OF EFFECTS

5.1. Effects of Proposed Actions

The effects determination was made using a method for evaluating current habitat conditions, the environmental baseline, and predicting effects of actions on the baseline. This process is described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of proposed actions are expressed in terms of the expected outcome (restore, maintain, or degrade) on aquatic habitat indicators in the project area. Habitat indicators include water quality (e.g., temperature, turbidity, nutrients, and chemicals), habitat access, habitat elements (e.g., substrate, large wood, rearing and spawning habitat, etc.), channel conditions, and watershed conditions.

The proposed action is a large project entailing considerable ground disturbing activity. Due to its location—nearly three miles above the uppermost reach of where OC coho salmon occur—and the fact that a good portion of the action would occur above the existing dam, it is expected that most habitat indicators would be maintained in their current state. Modifications within the *chute* will result in suspension of stream sediments immediately upstream of areas where OC coho salmon could be present. NMFS anticipates that the most likely impacts to individual OC coho salmon may result from mobilization of sediment resulting in stream turbidity, and from accidental spills of hazardous materials. Habitat access is expected to improve after the proposed modifications within the *chute* are completed. OC coho salmon will have access to more than two miles of the Nestucca River and Walker Creek for spawning and rearing.

Water Quality

Turbidity

Water quality could be degraded in the short term due to temporary pulses of sediment. Ground disturbing activities above and below dam and at the *chute* will expose and dislodge soils. Any precipitation could result in erosion of soils and increases in stream turbidity if erosion control measures are not adequate or poorly maintained.

An increase in turbidity can impact fish and filter-feeding macro-invertebrates downstream of the work site. Turbidity and suspended solids can effect primary and secondary productivity by reducing light transmission and by causing physical damage through abrasion and scouring. The settling of suspended solids can reduce benthic invertebrate numbers and diversity by reducing interstices in the stream substrate and altering their habitat. At high levels, turbidity may interfere with feeding and may injure and even kill both juvenile and adult fish (Spence *et al.* 1996).

To minimize potential impacts resulting from suspension of sediment, the applicant will implement best management practices (BMPs) and site specific erosion control measures. These will include placement of temporary ground cover on all exposed soils and slopes, placement of silt fences at the base of slopes and areas adjacent to drainage areas, and containment of all excavated materials. The applicant will inspect all sediment control structures weekly to assure effectiveness and proper function. Any sediment that is released above the dam is expected to be retained in the reservoir. Finally, all in-water work occurring on the downstream side of McGuire Dam will occur between July 1 and September 15. This provides for activities to occur during the dry season when rain events are at a minimum and streamflow is reduced. This will reduce the streams ability to transport suspended sediment to areas downstream where juvenile OC coho salmon may be present.

Hazardous Materials

Operation of construction equipment requires the use of fuel, lubricants, hydraulic fluid, etc., which if spilled into the channel of a water body or into the adjacent riparian zone, can injure or kill aquatic organisms. As with all construction activities, accidental release of petroleum-based materials and other contaminants could occur. The applicant will develop a site-specific Spill Prevention Control and Counter Measures Plan and submit it to NMFS for review prior to on-site construction staging. All transfer and storage of fuels and other toxic materials will be located away from water and drainage areas. All equipment used for in-water work will be cleaned of oil, grease, mud and dirt prior to use. Runoff from wash sites will be contained and treated if necessary. These measures will minimize the potential for both sub-lethal and lethal effects on OC coho salmon.

Habitat Improvements

As stated earlier, the proposed modifications to the *chute* are expected to have a beneficial effect for OC coho salmon as this is expected to allow this species access to spawning and rearing habitat above this reach. Final passage designs will be coordinated with ODFW and NMFS.

Concurrent to improving passage condition in the *chute*, habitat improvement work within the Meadow Lake reach will be implemented as well. The applicant will work with ODFW to place large wood (acquired from the newly cleared inundation zone above the dam) in this reach to improve habitat complexity and function.

Lastly, the establishment of a minimum flow release of 1.3 cubic feet per second (cfs) from the McGuire Reservoir for the period May 1 through October 30 is expected to improve water quality in the upper Nestucca River during the warmer months. A minimum flow release of 0.5 cfs will be in place the remainder of the year. These flow minimum volumes were based on an Instream Flow Incremental Methodology study conducted in the late 1980s. To prevent potential stranding of juveniles, the outlet at the dam will be fitted with equipment such that flows could be staged down gradually, if necessary, during the transition between the 1.3 and 0.5 cfs minimum flow requirements. The main source of flow above the *chute* is Walker Creek, a tributary roughly 0.25 mile downstream of the dam. During the wet season (late October through April), flow from Walker Creek essentially veils flows released from the dam and will likely be the main source of flow for any OC coho that may migrate into areas upstream of the *chute* once fish passage work is completed.

5.2. Effects on Critical Habitat

The NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features of designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage.

The NMFS anticipates that the greatest potential for impacts to critical habitat will be from suspension of sediments from ground disturbing activities. This includes construction on the downstream side of the dam and fish passage work within the *chute*. Short term releases of sediment could settle on downstream spawning areas and pools. This could plug interstitial spaces and cause cobbles to become imbedded, making the substrate unavailable for spawning and rearing. Due to the relatively short duration of the proposed action, the implementation of erosion control measures, and the fact that in-water work downstream of the dam will occur during the low flow period, NMFS anticipates that potential impacts to spawning or rearing habitat will be significantly ameliorated.

5.3. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

The NMFS is not aware of any future new (or changes to existing) non-Federal activities within the action area that will cause greater impacts to listed species than presently occurs. The NMFS assumes that future private and state actions will continue at similar intensities as in recent years.

6. CONCLUSION

Based on the available information, NMFS has determined that the proposed action is not likely to jeopardize the continued existence of OC coho salmon or adversely modify designated critical habitat.

In reaching this conclusion, NMFS determined that the survival and recovery of OC coho salmon will not be appreciably diminished by the proposed action. In summary, our conclusion is based on the following factors: (1) All in-water work downstream of McGuire Dam will be completed during ODFW's designated in-water work window for the Nestucca River (July 1-September 15), which will preclude the presence of migrating and spawning OC coho salmon downstream of the action area and minimize the transport of suspended sediments; (2) implementation of erosion and sediment control measures will minimize effects on OC coho salmon habitat; (3) it is not anticipated that the proposed action will result in increased summer stream temperatures as removal of riparian vegetation will be limited; and (4) potential effects from chemical contamination will be minimized or possibly eliminated as all refueling and servicing will not occur near any water bodies, equipment will be free of leaks and contaminants, and a Spill Prevention Control and Countermeasures Plan will be established. In addition, NMFS expects that the establishment of fish passage at the *chute*, placement of large wood—in coordination with ODFW—in the Meadow Lake reach, and establishment of a minimum flow release from McGuire Reservoir will provide benefits to OC coho salmon.

7. CONSERVATION RECOMMENDATIONS

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. NMFS has no additional conservation recommendations regarding the action addressed in this opinion.

8. REINITIATION OF CONSULTATION

Reinitiation of consultation is required: (1) If the action is modified in a way that causes an effect on the listed species that was not previously considered in the biological assessment and this biological opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

9. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the

terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

9.1. Amount or Extent of Take

The NMFS anticipates that the proposed action covered by this biological opinion has more than a negligible likelihood of incidental take of juvenile OC coho salmon resulting from short term pulses of suspended sediment. Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long term effects on the species' population levels. This is because the impacts are relatively small and not expected to appreciably add to cumulative effects.

Therefore, even though NMFS expects some low level of incidental take to occur due to the action covered by this biological opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as this, the NMFS designates the expected level of take as unquantifiable. Based on the information provided, NMFS anticipates that an unquantifiable but low level of incidental take could occur as a result of the action covered by this biological opinion. Moreover, the small amount of take that may occur is expected to be non-lethal.

9.2. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

The Corps shall:

1. Minimize the likelihood of incidental take from construction activities in or near watercourses by implementing pollution and erosion control measures.
2. Minimize the likelihood of incidental take associated with impacts to riparian and in-stream habitats by avoiding or replacing lost riparian and instream functions.
3. Minimize the likelihood of incidental take associated with instream work by restricting work to recommended in-water work periods.
4. Monitor the effectiveness of the proposed conservation measures in minimizing incidental take and report to NMFS.

5. Require that fish passage modifications within the *chute* be completed concurrent with completion of modifications to McGuire Dam.

9.3. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To Implement Reasonable and Prudent Measure No. 1, the Corps shall ensure that:
 - a. Construction activities meet or exceed all requirements of the Oregon Department of Environmental Quality for the National Pollutant Discharge Elimination System (NPDES) 1200-CA permit.
 - b. A Pollution Control Plan (PCP) is developed to prevent point-source pollution related to construction operations that satisfies all pertinent requirements of Federal, state and local laws and regulations, and the requirements of these conservation measures. The PCP will include the following:
 - i. A description of methods to be used to prevent erosion and sedimentation that covers sites, borrow pit operations, haul roads, equipment storage sites, fueling operations and staging areas;
 - ii. a description of the hazardous products or materials that will be used, including inventorying, storage, handling, and monitoring; and
 - iii. a spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures which will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
 - c. All erosion control devices shall be inspected weekly, at a minimum, during construction to ensure that they are working adequately.
 - d. Erosion control materials (i.e., silt fence, straw bales, biobags, aggregate, etc) in excess of those installed shall be available on site for immediate use during emergency erosion control needs.
 - e. Containment measures adequate to prevent construction and demolition materials from entering any waterway shall be implemented. Waterway shall be defined as that area below the mean high water elevation or 10-year flood elevation, whichever is greater.
 - f. An oil absorbing, floating boom shall be available on-site during all phases of construction.

- g. Vehicles operated within 150 feet of the waterway are free of fluid leaks. Daily examination of vehicles for fluid leaks is required during periods operated within or above the waterway.
 - h. No pollutants of any kind (sewage, waste spoils, petroleum products, fresh concrete cured less than 48 hours, silt, welding slag and grindings, concrete saw cutting by-products, sandblasting abrasive, etc.,) shall come in contact with the waterbody or wetlands nor their substrate below the mean high-high water elevation or 10-year flood elevation, whichever is greater.
 - i. Any areas used for staging, access roads, or storage are to be evacuated and all materials, equipment, and fuel shall be removed if flooding of the area is expected to occur within 24 hours.
 - j. Vehicle maintenance, re-fueling of vehicles and storage of fuel shall be done at least 150 feet from the waterway.
 - k. At the end of each work shift, vehicles shall not be stored within or over the waterway.
 - l. Prior to operating within the waterway, all equipment shall be cleaned of external oil, grease, dirt or caked mud. Any washing of equipment shall be conducted in a location that shall not contribute untreated wastewater to any flowing stream or drainage area.
 - m. No herbicide application shall occur as part of this project. Mechanical removal of undesired vegetation and root nodes is permitted.
 - n. Temporary erosion and sediment controls will be used on all exposed slopes during any hiatus in work exceeding 7 days
2. To implement Reasonable and Prudent Measure No. 2, the Corps shall ensure that:
- a. Clearing limits shall be identified and marked. Construction activity or movement of equipment into existing vegetated areas shall begin until clearing limits are marked.
 - b. Material removed during excavation will only be placed in locations where it cannot enter sensitive aquatic resources. Whenever topsoil is removed, it shall be stored and reused onsite to the greatest extent possible.
 - c. Alteration or disturbance of the stream banks and existing riparian vegetation will be minimized to the greatest extent possible.
 - d. All existing vegetation within 150 feet of the edge of bank, downstream of the dam, should be retained to the greatest extent possible.

- e. Plantings shall achieve an 80 percent survival success after three years.
 - f. Plantings shall use only native species.
3. To implement Reasonable and Prudent Measure No.3, the Corps shall ensure that:
- a. Survey and mark the mean high water elevation or 10-year flood elevation, whichever is greater, prior to construction.
 - b. All in-water work occurring on the downstream side of McGuire Dam shall be completed within the work period of July 1 and September 15.
 - c. No in-water work on the downstream side of McGuire Dam shall take place outside this period without prior written authorization from the Corps, in consultation with ODFW and NMFS.
4. To Implement Reasonable and Prudent Measure No. 4, the Corps shall ensure that:
- a. The applicant shall provide NMFS a post-construction monitoring report of erosion and pollution control measures which shall consist of the following:
 - i. The report shall include photographs of erosion control devices implemented for work downstream of McGuire Dam and at the *chute*.
 - ii. A narrative shall be provided describing any failures experienced with erosion control measures and efforts made to correct them.
 - iii. Copies of all erosion control inspection reports shall be provided.
 - b. Any accidental spills of hazardous materials that reach waters of the Nestucca River shall be reported to NMFS.
 - c. The applicant, in coordination with NMFS and ODFW, shall develop a monitoring plan for evaluating the performance of fish passage modifications to the *chute*.
 - d. Monitoring and accident spill reports shall be submitted to:

National Marine Fisheries Service
Attn: Scott Carlon
525 NE Oregon Street, Suite 500
Portland, Oregon 97232-2778

5. To Implement Reasonable and Prudent Measure No. 5, the Corps shall ensure that:
 - a. Modifications to restore anadromous fish passage within the *chute* shall be completed within two years of construction start-up at McGuire Dam. Construction start-up does not include pre-construction staging or planning.
 - b. The applicant shall notify NMFS, ODFW, and the Corps if restoration of fish passage is delayed for any reason beyond two years of construction start-up at McGuire Dam.

10. ESSENTIAL FISH HABITAT CONSULTATION

10.1 Background

The objective of the Essential Fish Habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse impacts to EFH resulting from the proposed action.

10.2. Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NMFS on activities that may adversely affect EFH.

EFH means “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (MSA §3). The Pacific Fisheries Management Council (Council) has designated EFH for federally-managed groundfish (PFMC 1998a), coastal pelagic (PFMC 1998b), and Pacific salmon (PFMC 1999) fisheries (Table 1).

Table 1. Species with designated EFH found in waters of the State of Oregon.²

Ground Fish Species	Blue rockfish (<i>S. mystinus</i>)	Rougheye rockfish (<i>S. aleutianus</i>)	Flathead sole (<i>Hippoglossoides elassodon</i>)
Leopard shark (<i>Triakis semifasciata</i>)	Bocaccio (<i>S. paucispinis</i>)	Sharpchin rockfish (<i>S. zacentrus</i>)	Pacific sanddab (<i>Citharichthys sordidus</i>)
Soupfin shark (<i>Galeorhinus zyopterus</i>)	Brown rockfish (<i>S. auriculatus</i>)	Shortbelly rockfish (<i>S. jordani</i>)	Petrable sole (<i>Eopsetta jordani</i>)
Spiny dogfish (<i>Squalus acanthias</i>)	Canary rockfish (<i>S. pinniger</i>)	Shortraker rockfish (<i>S. borealis</i>)	Rex sole (<i>Glyptocephalus zachirus</i>)
Big skate (<i>Raja binoculata</i>)	Chilipepper (<i>S. goodei</i>)	Silvergray rockfish (<i>S. brevispinus</i>)	Rock sole (<i>Lepidopsetta bilineata</i>)
California skate (<i>R. inornata</i>)	China rockfish (<i>S. nebulosus</i>)	Speckled rockfish (<i>S. ovalis</i>)	Sand sole (<i>Psettichthys melanostictus</i>)
Longnose skate (<i>R. rhina</i>)	Copper rockfish (<i>S. caurinus</i>)	Splitnose rockfish (<i>S. diploproa</i>)	Starry flounder (<i>Platyichthys stellatus</i>)
Ratfish (<i>Hydrolagus colliei</i>)	Darkblotched rockfish (<i>S. crameri</i>)	Stripetail rockfish (<i>S. saxicola</i>)	
Pacific rattail (<i>Coryphaenoides acrolepis</i>)	Grass rockfish (<i>S. rastrelliger</i>)	Tiger rockfish (<i>S. nigrocinctus</i>)	Coastal Pelagic Species
Lingcod (<i>Ophiodon elongatus</i>)	Greenspotted rockfish (<i>S. chlorostictus</i>)	Vermillion rockfish (<i>S. miniatus</i>)	Northern anchovy (<i>Engraulis mordax</i>)
Cabezon (<i>Scorpaenichthys marmoratus</i>)	Greenstriped rockfish (<i>S. elongatus</i>)	Widow Rockfish (<i>S. entomelas</i>)	Pacific sardine (<i>Sardinops sagax</i>)
Kelp greenling (<i>Hexagrammos decagrammus</i>)	Longspine thornyhead (<i>Sebastolobus altivelis</i>)	Yelloweye rockfish (<i>S. ruberrimus</i>)	Pacific mackerel (<i>Scomber japonicus</i>)
Pacific cod (<i>Gadus macrocephalus</i>)	Shortspine thornyhead (<i>Sebastolobus alascanus</i>)	Yellowmouth rockfish (<i>S. reedi</i>)	Jack mackerel (<i>Trachurus symmetricus</i>)
Pacific whiting (Hake) (<i>Merluccius productus</i>)	Pacific Ocean perch (<i>S. alutus</i>)	Yellowtail rockfish (<i>S. flavidus</i>)	Market squid (<i>Loligo opalescens</i>)
Sablefish (<i>Anoplopoma fimbria</i>)	Quillback rockfish (<i>S. maliger</i>)	Arrowtooth flounder (<i>Atheresthes stomias</i>)	
Aurora rockfish (<i>Sebastes aurora</i>)	Redbanded rockfish (<i>S. babcocki</i>)	Butter sole (<i>Isopsetta isolepsis</i>)	Salmon
Bank Rockfish (<i>S. rufus</i>)	Redstripe rockfish (<i>S. proriger</i>)	Curlfin sole (<i>Pleuronichthys decurrens</i>)	Coho salmon (<i>O. kisutch</i>)
Black rockfish (<i>S. melanops</i>)	Rosethorn rockfish (<i>S. helvomaculatus</i>)	Dover sole (<i>Microstomus pacificus</i>)	Chinook salmon (<i>O. tshawytscha</i>)
Blackgill rockfish (<i>S. melanostomus</i>)	Rosy rockfish (<i>S. rosaceus</i>)	English sole (<i>Parophrys vetulus</i>)	

² From Casillas *et al* 1998, Dees 1961, Emmett *et al.* 1991, Eschmeyer *et al.* 1983, Fields 1965, Gotshall 1977, Hart 1973, Healey 1991, Miller and Lea 1972, Monaco *et al.* 1990, Phillips 1957, Phillips 1964, Roedel 1948, Roedel 1953, Sandercock 1991, Turner and Sexsmith 1967, and Walford 1931.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

The consultation requirements of section 305(b) of the MSA (16 U.S.C. 1855(b)) provide that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

10.3. Identification of Essential Fish Habitat

Groundfish and coastal pelagic EFH extend from tidal submerged environments within Washington, Oregon, and California offshore to the exclusive economic zone limit of 200 miles (PFMC 1998a; PFMC 1998b).

A description and identification of EFH for salmon is found in Appendix A of Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). The EFH includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon in Washington, Oregon, Idaho, and California, except above the impassable barriers identified by the Council (PFMC 1999). Chief Joseph Dam, Dworshak Dam, and the Hells Canyon Complex (Hells Canyon, Oxbow, and Brownlee Dams) are among the listed man-made barriers that represent the upstream extent of the Pacific salmon fishery EFH. Salmon EFH excludes areas upstream of longstanding naturally impassable barriers (i.e., natural waterfalls in existence for several hundred years). In the estuarine and marine areas, proposed designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (200 miles) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border (PFMC 1999).

10.4. Proposed Actions

The proposed actions are detailed above in Section II. The action area encompasses the areas immediately associated with McGuire Dam, downstream to approximately river mile 46, or the downstream end of the *chute*.

10.5. Effects of the Proposed Action

As described in Section V, these activities may result in detrimental short-term impacts to OC coho and chinook salmon habitat from temporary releases of sediment due to ground disturbing activities.

10.6. Conclusion

The NMFS believes that the proposed action is likely to adversely affect designated EFH for Pacific salmon (chinook and coho).

10.7. EFH Conservation Recommendations

The Reasonable and Prudent Measures and the Terms and Conditions outlined above in Section X are applicable to designated Pacific salmon EFH. Therefore, NMFS recommends that they be adopted as EFH conservation measures. Should the Corps adopt and implement these recommendations, potential adverse impacts to EFH will be minimized.

The MSA and Federal regulation (50 CFR Section 600.920) require Federal action agencies to provide a written response to EFH Conservation Recommendations within 30 days of receipt. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity. If the response is inconsistent with NMFS' conservation recommendations, the reasons for not implementing them must be included.

In the case of the actions currently under consultation, the recommendations constitute non-discretionary Terms and Conditions of the biological opinion, and as such, the projects may not be carried out without their implementation. Therefore, NMFS assumes the Corps will accept these recommendations and further response by the Corp is not necessary. However, if the Corps does not agree with these recommendations, the Corps must respond and provide an explanation of the reasons for not implementing them.

10.8. Consultation Renewal

The Corps must reinitiate EFH consultation with NMFS if either action is substantially revised in a way that may adversely affect EFH species or new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600.920).

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